LISTING OF CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently amended) A process for coating a substrate ~~(1)~~ with ~~at least one~~ a functional layer ~~(2)~~, comprising the steps of:

~~a)~~ providing the substrate ~~(1)~~ and ~~the~~ a layer starting material in a vacuum system ~~(5), and~~;

~~b) coating the substrate (1) with a functional layer (2)~~ ~~by~~ sputtering ~~of~~ the layer starting material on the substrate to define a first portion of the functional layer~~, wherein~~;

~~b1) the sputtering of the layer starting material for coating of the substrate (1) with a functional layer (2) is interrupted~~ interrupting the sputtering at least once to produce an intermediate layer ~~(4)~~ on the first portion, the intermediate layer being ~~which is~~ different than the functional layer and ~~has~~ having a thickness of [[≤]] less than or equal to 20 nm~~,~~; and

~~b2) the~~ continuing sputtering ~~of~~ the layer starting material ~~is continued~~ after ~~the interruption~~ the intermediate layer is produced to define a second portion of the functional layer, wherein the intermediate layer is sufficient to increase the transmittance and/or reflectance of the functional layer.

2. (Currently amended) The process for coating a substrate ~~(1)~~ as claimed in claim 1, wherein the ~~coating of the substrate (1) by means of a functional layer (2) is realized by means of~~ sputtering comprises magnetron sputtering of the layer starting material.

3. (Cancelled)

4. (Currently amended) The process for coating a substrate ~~(1)~~ as claimed in ~~one of the preceding claims, wherein~~ claim 1, further comprising repeating the sputtering, interrupting, and continuing steps so that a plurality of functional layers ~~(2)~~ are applied~~, in particular~~ as an alternating layer system ~~made up of~~ comprising a first functional layer~~s (2)~~ with a low refractive index and a second functional layer~~s (2)~~ with a high refractive index.

5. (Currently amended) The process for coating a substrate ~~(1)~~ as claimed in claim 4, wherein the first functional layer~~s (2) with a low refractive index are interrupted by sputtering~~ has a first intermediate layer~~s (4)~~ with a high refractive index and/or the second functional layer~~s (2) with a high refractive index are interrupted by sputtering~~ has a second intermediate layer~~s (4)~~ with a low refractive index~~, the intermediate layers remaining below a thickness at which they become optically active, preferably ≤ 10 nm~~.

6. (Currently amended) The process for coating a substrate ~~(1)~~ as claimed in claim 5, wherein the first functional layer~~s (2) with a low refractive index~~ and the second intermediate layer~~s (4) with a low refractive index~~ consist of SiO_2 by virtue of silicon being sputtered in a reactive atmosphere, and the second functional layer~~s (2) with a high refractive index~~ and the first intermediate layer~~s (4) with a high refractive index~~ consist of ZrO_2 by virtue of zirconium being sputtered in a reactive atmosphere.

7. (Currently amended) The process for coating a

substrate ~~(1)~~ as claimed in ~~one of claims 1 to 3~~ claim 1, wherein the layer starting material comprises a pure metal target ~~layer is applied as functional layer (2) by sputtering a metal~~.

8. (Currently amended) The process for coating a substrate ~~(1)~~ as claimed in claim 7, wherein the ~~interruption to the sputtering of the functional layer (2) is effected by~~ interrupting step comprises introducing an oxygen-rich microwave plasma into the vacuum chamber~~, with an intermediate layer (4) consisting of metal oxide by virtue of the~~ so that a surface of the first portion of the functional layer ~~(2) of metal which has previously been grown being~~ is oxidized.

9. (Currently amended) The process for coating a substrate ~~(1) with a functional layer (2)~~ as claimed in claim 8, wherein the ~~functional layer (2) is applied by sputtering~~ pure metal target comprises chromium.

10. (Currently amended) The process for coating a substrate ~~(1)~~ as claimed in ~~one of the preceding claims, wherein the~~ claim 1, further comprising locating a plurality of substrates ~~(1),~~ on a drum ~~(7) located~~ inside the vacuum chamber[[,]] and rotating the drum so that the plurality of substrates rotate past a plurality of targets ~~(10, 11, 12)~~ comprising the layer starting material and an oxygen source ~~(8)~~.

11. (Currently amended) A coated substrate ~~(1) having~~ comprising:

at least one functional layer ~~(2) formed from~~ of a metal~~, wherein the functional layer (2) has~~; and

at least one intermediate layer ~~(4)~~ of a metal oxide which interrupts ~~it and is ≤~~ the at least one functional layer and has a thickness that is less than or equal to 10 nm ~~thick;~~.

12. (Currently amended) The coated substrate ~~(1)~~ as claimed in claim 11, wherein the at least one functional layer ~~(2)~~ is a chromium layer.

13. (Currently amended) The coated substrate ~~(1)~~ as claimed in ~~one of claims 11 and~~ claim 12, wherein the ~~interrupting~~ at least one intermediate layer ~~(4) of a metal oxide~~ is ~~a~~ at least one chromium oxide layer.

14. (Cancelled)

15. (Currently amended) The coated substrate as claimed in ~~one of claims 11 to 14, which~~ claim 11, wherein the coated substrate is used as a substrate for lithographic processes.

16. (Currently amended) A coated substrate ~~(1) having~~ comprising:

at least one functional layer ~~(2)~~ of a metal oxide~~, wherein the functional layer (2) has~~; and

at least one intermediate layer ~~(4)~~ of a metal oxide which interrupts ~~it~~ the at least one functional layer and remains below a thickness at which ~~it~~ the at least one intermediate layer is optically active.

17. (Currently amended) The coated substrate ~~(1)~~ as claimed in claim 16, ~~which~~ wherein the at least one functional layer comprises an alternating layer system made up of a first functional layer~~s~~ with a high refractive index and a second functional layer~~s~~ with a low refractive index.

18. (Currently amended) The coated substrate ~~(1)~~ as claimed in claim 17, wherein the second functional layer ~~(2) with a low refractive index consists of~~ is formed from SiO_2 and the first functional layer ~~(2) with a high refractive index consists of~~ is formed from ZrO_2.

19. (Currently amended) The coated substrate ~~(1)~~ as claimed in claim 18, wherein the ~~interrupting~~ at least one intermediate layer ~~(4) of a metal oxide~~ in ~~a~~ the first functional layer ~~(2) with a high refractive index formed from ZrO_2 is an intermediate layer (4) with~~ has a low refractive index formed from SiO_2, and the at least one interrupting intermediate layer ~~(4) of a metal oxide~~ in ~~a~~ the second functional layer ~~(2) with a low refractive index formed from SiO_2 is an intermediate layer (4) with~~ has a high refractive index formed from ZrO_2.

20. (Cancelled)

21. (Currently amended) The coated substrate as claimed in ~~one of claims 16 to 20, which~~ claim 16, wherein the coated substrate is used as an optical element.

22. (Currently amended) The coated substrate as claimed in claim 21, ~~which is used as~~ wherein the optical element is a color filter.

23. (Currently amended) The coated substrate as claimed in ~~one of claims 11 to 22~~ claim 16, wherein the at least one functional layer is an optical functional layer.

24. (New) The process for coating a substrate as claimed in claim 5, wherein the first and second intermediate layers have a thickness of less than or equal to 10 nm.